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DS2110
Plug and Play SCSI Terminator with EEPROM

FEATURES

- Fully compliant with SCSI, SCSI–2 and SCSI–3 standards
- Compatible with Plug and Play SCSI Specification
- Functionally compatible with DS21S07A
- Provides active termination for 18 signal lines
- 2% tolerance on termination resistors and voltage regulator
- 4–wire microcontroller interface
- Intelligent bus termination sensing and control
- Terminator status register
- 1K/2K/4K bits EEPROM
- Low power down capacitance of 3 pF

PIN ASSIGNMENT

PINOUT AND PACKAGE TBD

DESCRIPTION

The DS2110 is intended for one chip Plug and Play (PnP) SCSI termination. Plug and Play SCSI requires the exit–point terminator on computer motherboards or host bus adapters to automatically switch off if an external device is connected to the system. The DS2110 satisfies this requirement with onboard current sensing circuitry. If an external device is connected, the DS2110 will automatically be isolated from the SCSI bus thereby maintaining proper system termination. The DS2110 integrates a low drop–out regulator, 18 precise switched 110 ohm termination resistors, a microprocessor interface, bus termination sensor, and EEPROM into a TBD package. Active termination provides: greater immunity to voltage drops on the TERMPWR (TERMination PoWeR) line, enhanced high–level noise immunity, intrinsic TERMPWR decoupling, and very low quiescent current consumption. The DS2110 contains an output port that can control the power down pin of additional terminators (DS21S07A) for Wide SCSI applications. 1K, 2K or 4K bits of EEPROM is included to store Plug and Play register parameters. An external microcontroller can access the EEPROM as well as control and monitor the status of the terminator via a 4–wire interface.

REFERENCE DOCUMENTS

SCSI–2 (X3.131–1994)
SCSI–3 Parallel Interface (X3T10/855D)
Available from:
Global Engineering Documents
15 Inverness Way East
Englewood, CO 80112–5704
Phone: (800) 854–7179, (303) 792–2181
Fax: (303) 792–2192

PnP SCSI Specification
PnP ISA Specification
PnP BIOS Specification
PnP Option ROM Specification
Available from:
Plug and Play forum on CompuServe
(Go plugplay)

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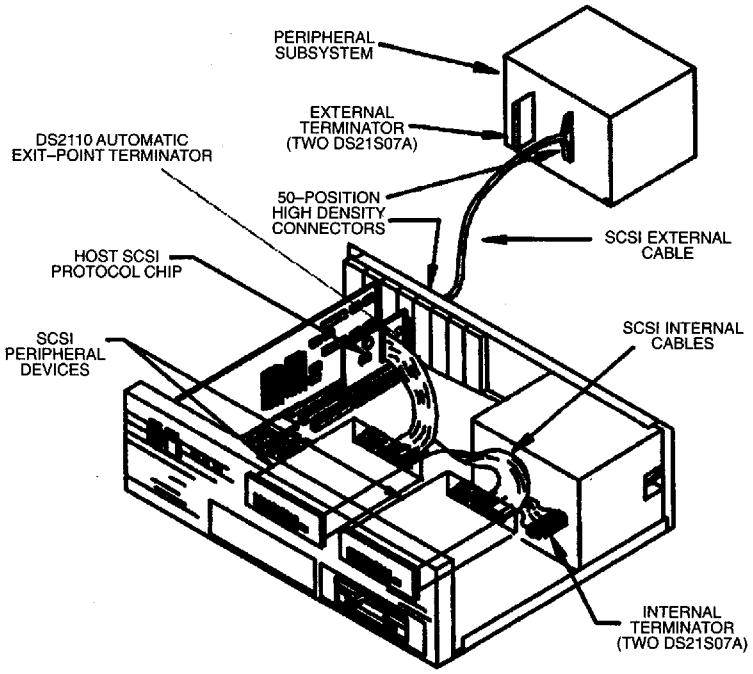
FUNCTIONAL DESCRIPTION

The DS2110 is designed to be a single chip termination subsystem for use in PnP SCSI systems. (See Figure 1.) When embedded on a host bus adapter or motherboard, the DS2110 can automatically sense the termination status of the SCSI bus and attach or isolate its resistors as needed to maintain proper bus termination. External and internal active termination can be provided by the DS21S07A.

DS2110 APPLICATION ENVIRONMENT Figure 1



The DS2110 consists of 4 major functional blocks as illustrated in Figure 2:

- Voltage reference, terminating resistors, and isolation switches
- Bus sensing circuitry
- EEPROM
- Microcontroller interface and status register

The power down mode isolates the resistors from the SCSI bus and disables the power amp, thereby placing the DS2110 in a low power mode (the bus sensing circuitry always stays active). The power down mode can be entered either by strapping (Power Down Input Output) low or via the control register under software command. The pin is dominant over the control register; therefore, to enable software control, the pin must be left open. The pin can also be connected to the pin of a DS21S07A SCSI terminator for Wide SCSI configurations. (See Figure TBD.)

The microcontroller interface allows access to several unique features of the DS2110:

- Power up/down the DS2110 to attach/isolate the terminator to/from the bus
- Enable auto–termination mode
- Write/read EEPROM registers
- Determine bus termination status
- Query the port to read DS2110 status register

A simple 4–wire serial interface is used to communicate with a microcontroller.

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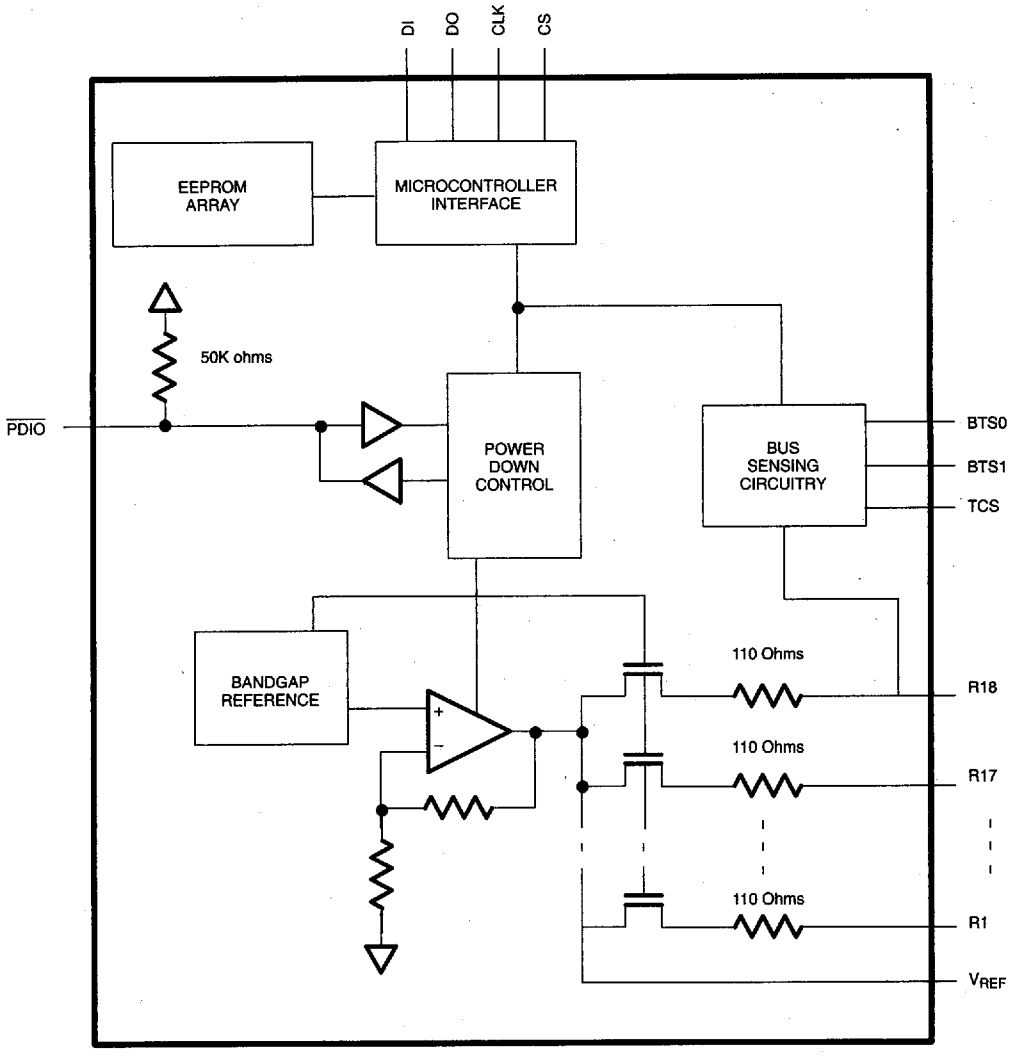
DS2110 BLOCK DIAGRAM Figure 2



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